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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,787	01/18/2002	Hiroshi Echizen	03560.002983	9569

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EXAMINER

VERSTEEG, STEVEN H

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,787

Applicant(s)

ECHIZEN ET AL.

Examiner

Steven H VerSteeg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-29863 (JP '863).

3. For claim 1, Applicant requires a sputtering method for forming a film on a substrate in a film forming space while monitoring emission intensity of the plasma comprising detecting a thickness of the film formed; comparing a detected value with a preset value; deciding a target value of the emission intensity that will provide the preset value of the film thickness in accordance with a compared result, and adjusting the emission intensity to the target value.

4. For claim 8, Applicant requires a sputtering apparatus comprising a film forming container, a substrate feeding mechanism, and an emission intensity monitor. The apparatus also comprises a film thickness measuring device that measures the film thickness and produces a result and a comparator that compares the output with a preset value and outputs a target value of the emission intensity monitor. The apparatus also comprises an emission intensity target-value setting unit configured to receive the output target value from the comparator and to adjust the emission intensity to the target value.

5. JP '863 discloses a process comprising forming a film while monitoring the emission intensity [0018] comprising detecting the thickness of the film, comparing that value to a preset

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value, and deciding a target value for the emission intensity [0018]. The apparatus comprises a substrate feeding mechanism (Figure 1), emissivity monitor [0018], film thickness measuring device [0018], and comparator [0018]. In performing the process, the thickness of the film formed is measured ([0018], line 4), the thickness is compared to the preset value ([0018], line 5), and the target value of the emission intensity that will provide the preset value of the thickness is decided and adjusted to the target value ([0018], lines 7-9). Thus, the apparatus would have an emission intensity target-value setting unit.

6. For claim 2, Applicant requires a flow rate of at least one of the gases introduced to the film forming space to be controlled such that the actual emission intensity is adjusted at the target value of the emission intensity. For claim 9, Applicant requires a gas flow rate control mechanism that controls the flow rate of at least one the gases introduced. JP '863 discloses a gas flow control mechanism [0018] that controls the flow rate of the gas introduced to control the emission intensity [0018].

7. For claim 3, Applicant requires a target containing In. For claim 4, Applicant requires the target to be a cylindrical rotating target. JP '863 discloses the use of an In-containing rotating cylindrical target [0022].

8. For claim 5, Applicant requires oxygen gas. JP '863 uses oxygen gas [0018].

9. For claim 6, Applicant requires the target value to fall in a predetermined range defined beforehand. JP '863 discloses the limitation [0018].

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-29863 (JP '863).

12. For claim 7, Applicant requires that if the target value deviates from the predetermined range, sputtering is stopped.

13. JP '863 discloses that target value to be in a predetermined range, but does not specifically state that the sputtering is stopped if the value is outside that range. Such a limitation would have been obvious. If sputtering is continued when the value is outside of the range, then defective products will be produced. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of JP '863 to stop sputtering if the value is outside the range because of the desire to not produce defective products.

Response to Amendment

14. The objection to the specification presented in the office action mailed March 18, 2003 is withdrawn in light of the amendment.

15. The 102(b) rejection of claims 1-6, 8, and 9 over JP 11-29863 (JP '863) presented in the office action mailed March 18, 2003 stands.

16. The 103(a) rejection of claim 7 over JP 11-29863 (JP '863) presented in the office action mailed March 18, 2003 stands.

Response to Arguments

17. Applicant's arguments filed August 18, 2003 have been fully considered but they are not persuasive.

18. Applicant has argued that JP '863 does not disclose changing the emission intensity based upon the thickness of the deposited film. Applicant believes that the emission intensity of JP '863 is held constant by changing the flow rate of the reactive gas. I disagree.

19. Initially, JP '863 forms a film. Then, the "thickness is measured" ([0018], line 4). Following measuring of the thickness, the "luminescence intensity of the plasma is adjusted so that the thickness set up beforehand and the thickness under measurement may become the same" ([0018], lines 5-6). To be more specific, "the set point of the luminescence intensity is always adjusted so that thickness may become the same as the set point" ([0018], lines 7-8). In other words, the luminescent intensity is adjusted so that the desired film thickness may be achieved.

20. Admittedly, once the luminescent intensity is adjusted and deposition continues, the luminescent intensity "becomes fixed" ([0018], line 9) and is held fixed by controlling the oxygen gas flow rate, but that does not change the fact that the newly set luminescent intensity is adjusted to the newly set value based upon the measurement of the deposited film and the desire to obtain the desired film thickness.

21. Applicant then argues that JP '863 does not disclose the emission-intensity target value setting unit. I again disagree.

22. JP '863 discloses something that changes the luminescent intensity based upon the thickness measurements. Therefore, JP '863 teaches the limitation.

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General Information

For general status inquiries on applications not having received a first action on the merits, please contact the Technology Center 1700 receptionist at (703) 308-0661.

For inquiries involving Recovery of lost papers & cases, sending out missing papers, resetting shortened statutory periods, or for restarting the shortened statutory period for response, please contact Palestine Jenkins at (703) 308-3521.

For general inquiries such as fees, hours of operation, and employee location, please contact the Technology Center 1700 receptionist at (703) 308-0661.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (703) 305-4473. The examiner can normally be reached on Mon - Thurs (7:30 AM - 6:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Steven H VerSteeg
Primary Examiner
Art Unit 1753

shv
September 9, 2003